

CODE ANALYSIS

DATC HVAC UPGRADES  
BLDG. C

DFCM PROJECT #07174220

APPLICABLE CODES			
Year		Year	
International Building Code	2006	National Electrical Code	2004
International Mechanical Code	2006	Uniform Code for	
International Plumbing Code	2006	Building Conservation	
International Fire Code	2006	ADA Accessibility	
International Energy		Guidelines	
Conservation Code	2006		

A.   Occupancy and Group: \_\_\_\_\_

Change in Use: Yes \_\_\_\_\_ No ☒ Mixed Occupancy: Yes \_\_\_\_\_ No \_\_\_\_\_

Special Use and Occupancy (e.g. High Rise, Covered Mall): \_\_\_\_\_

B.   Seismic Design Category:   D        Design Wind Speed:   90   mph

C.   Type of Construction (circle one):

          I    I    II    II    III    III    IV    V    V

          A    B    A    B    A    B    HT    A    B

D.   Fire Resistance Rating   Requirements for the Exterior Walls based on the fire separation distance (in hours):

North: \_\_\_\_\_ South: \_\_\_\_\_ East: \_\_\_\_\_ West: \_\_\_\_\_

E.   Mixed Occupancies:   \_\_\_\_\_      Nonseparated Uses:   \_\_\_\_\_

F:   Sprinklers:

Required: \_\_\_\_\_ Provided: \_\_\_\_\_ Type of Sprinkler System: \_\_\_\_\_

G:   Number of Stories:   \_\_\_\_\_ Building Height: \_\_\_\_\_

H:   Actual Area   per Floor (square feet): \_\_\_\_\_

I:   Tabular Area: \_\_\_\_\_

J:   Area Modifications:

a)  $A_a = A_t + \left[ \frac{A_t I_t}{100} \right] + \left[ \frac{A_t I_s}{100} \right]$        $I_t = 100 \left[ \frac{F}{P} - 0.25 \right] \frac{W}{30}$

b)   Sum of the Ratio Calculations for Mixed Occupancies:

Actual Area   \_\_\_\_\_  $\leq$  1

Allowable Area

c)   Total Allowable Area for:

1)   One Story:   \_\_\_\_\_

2)   Two Story:    $A_a(2)$  \_\_\_\_\_

3)   Three Story:    $A_a(3)$  \_\_\_\_\_

d)   Unlimited Area Building:   Yes \_\_\_\_\_ No \_\_\_\_\_ Code Section: \_\_\_\_\_

K.   Fire Resistance Rating Requirements for Building Elements (hours).

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls			Floors - Ceiling Floors		
Interior Bearing Walls			Roofs - Ceiling Roofs		
Exterior Non-Bearing Walls			Exterior Doors and Windows		
Structural Frame			Shaft Enclosures		
Partitions - Permanent			Fire Walls		
Fire Barriers			Fire Partitions		
			Smoke Partitions		

L.   Design Occupant Load: \_\_\_\_\_

Exit Width Required:   \_\_\_\_\_ Exit Width Provided:   \_\_\_\_\_

M.   Minimum Number of Required Plumbing Facilities:

a)   Water Closets - Required (m) \_\_\_\_\_ (f) \_\_\_\_\_ Provided (m) \_\_\_\_\_ (f) \_\_\_\_\_

b)   Lavatories - Required (m) \_\_\_\_\_ (f) \_\_\_\_\_ Provided (m) \_\_\_\_\_ (f) \_\_\_\_\_

c)   Bath Tubs or Showers:   \_\_\_\_\_

d)   Drinking Fountains:   \_\_\_\_\_ Service Sinks: \_\_\_\_\_

FOOTNOTES:

1) In case of conflict with the U.S. Department of Justice Federal Registers Parts 1 through 16 - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.

2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:

a) High Rise Requirements.

b) Atriums.

c) Performance Based Criteria.

d) Means or Egress Analysis.

e) Fire Assembly Locator Sheet.

f) Exterior and Interior Accessibility Route.

g) Fire Stopping, Including Tested Design Number.



State of Utah—Department of Administrative Services

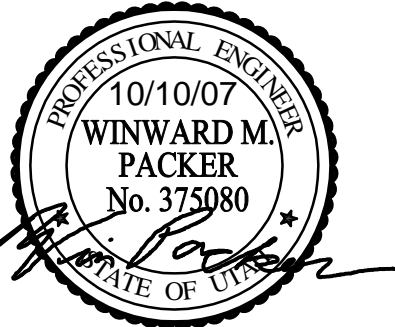
DIVISION OF FACILITIES CONSTRUCTION  
AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

MECHANICAL ENGINEER  
WHW ENGINEERING, INC.  
1354 EAST 3300 SOUTH SUITE 200  
SALT LAKE CITY, UTAH 84106  
PHONE: (801) 466-4021 FAX: (801) 466-8536



**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 466-4021, FAX 466-8536  
EMAIL: excellence@whw-engineering.com



DRAWING INDEX:	
M001	TITLE SHEET
MG001	MECHANICAL GENERAL NOTES AND LEGEND
MD101	MECHANICA ROOF DEMOLITION PLAN
ME101	MECHANICAL ROOF PLAN
ME401	LARGE SCALE MECHANICAL ROOF PLAN
ME501	MECHANICAL DETAILS
ME502	MECHANICAL DETAILS
ME601	MECHANICAL SCHEDULES



MECHANICAL LEGEND											
SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION
GENERAL TERMINOLOGY			AIR SIDE			WET SIDE			WET SIDE CONT		
		SECTION LETTER DESIGNATION			EXISTING AIR DUCT TO BE REMOVED			UNION			ELBOW UP
		SECTION DRAWN ON THIS SHEET			EXISTING AIR DUCT TO REMAIN			MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)			ELBOW DOWN
		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION			NEW AIR DUCT			MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)			TEE UP
		MECHANICAL EQUIPMENT DESIGNATION			RECT. TO RECT. AIR DUCT TAKE-OFF			MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)			TEE DOWN
		EQUIPMENT ITEM DESIGNATION			RND. TO RND. AIR DUCT TAKE-OFF			PNEUMATIC DIAPHRAGM ACTUATOR			EXISTING PIPING TO BE REMOVED
		REGISTER, GRILL OR DIFFUSER DESIGNATION WITH BALANCING CFM LISTED BELOW			RECT. TAKE-OFF AT END OF MAIN			ELECTRIC MOTOR ACTUATOR			EXISTING PIPING TO REMAIN
		GRILLE, OR LOUVER DESIGNATION WHERE BALANCING NOT REQUIRE			FLEXIBLE AIR DUCT			SOLENOID ACTUATOR			NEW PIPING
		REVISION DESIGNATOR AND NUMBER			LINED DUCT			THREADED OR SWEAT VALVE CONNECTION			PIPE CAP OR PLUG
		KEY NOTE DESIGNATOR AND NUMBER			VANED ELBOW			FLANGED VALVE CONNECTION			CONCENTRIC REDUCER
		POINT OF CONNECTION			CONCENTRIC DUCT TRANSITION			BUTTERFLY VALVE			FLEXIBLE CONNECTION
		POINT OF REMOVAL			ECCENTRIC DUCT TRANSITION			GATE VALVE			CONDENSATE DRAIN
AFF		ABOVE FINISHED FLOOR			SUPPLY AIR DIFFUSER			MOTORIZED 2-WAY CONTROL VALVE			NATURAL GAS PIPING
AP		ACCESS PANEL			VOLUME DAMPER			MOTORIZED 3-WAY CONTROL VALVE			CHEMICAL FEED LINE
CL		CENTER LINE ELEVATION			SUPPLY AIR DIFFUSER			CHECK VALVE			MAKE-UP WATER LINE
MC		MECHANICAL CONTRACTOR			RETURN AIR, FRESH AIR, AND TRANSFER AIR		CBV	CIRCUIT BALANCING VALVE		CW	CULINARY COLD WATER
CC		CONTROL CONTRACTOR			CEILING MOUNTED EXHAUST FAN OR EXHAUST GRILLE		BV	BALL VALVE		HW	CULINARY HOT WATER
EC		ELECTRICAL CONTRACTOR			RETURN OR OUTSIDE AIR DUCT UP			AUTOMATIC AIR VENT		DR	EQUIPMENT DRAIN
FPC		FIRE PROTECTION CONTROL			SUPPLY DUCT UP			MANUAL AIR VENT		HWS	HEATING WATER SUPPLY
NIC		NOT IN CONTRACT			EXHAUST AIR INTAKE UP			STRAINER		HWR	HEATING WATER RETURN
NTS		NOT TO SCALE			RETURN OR OUTSIDE AIR DUCT DOWN			STRAINER W/ PLUGGED BLOW OFF			
C		COMMON			SUPPLY DUCT DOWN		VTI	VENTURI			
NC		NORMALLY CLOSED			EXHAUST DUCT DOWN			PRESSURE GAUGE AND GAUGE COCK - WATER			
NO		NORMALLY OPEN			LOWER DUCT DOWN			THERMOMETER AND THERMOWELL			
					FLEXIBLE DUCT CONNECTION			WATER TEMPERATURE SENSOR AND THERMOWELL			
					FILTER BANK			THERMOWELL			
					COIL			THERMOWELL			
				AP	ACCESS PANEL		TW	THERMOWELL			
					EXISTING EQUIPMENT TO BE REMOVED			THERMOWELL			
					EXISTING EQUIPMENT TO REMAIN			THERMOWELL			
					NEW EQUIPMENT			THERMOWELL			
				MVD	MOTORIZED VOLUME DAMPER						
				BD	BACKDRAFT DAMPER						
				FD	FIRE DAMPER						
				SD	SMOKE DAMPER						
				FS	FIRE & SMOKE DAMPER						
				T-STAT	WALL MOUNTED THERMOSTAT						
					WALL MOUNTED TEMP. SENSOR						
				SA	SUPPLY AIR						
				RA	RETURN AIR						
				EA	EXHAUST AIR						
				OA	OUTSIDE AIR						
				MA	MIXED AIR						
				FA	FRESH AIR						
				RF	RELIEF AIR						

GENERAL NOTES:

G-1

MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING DRAWINGS BY OTHER DISCIPLINES AND SPECIFICATIONS.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

G-2

ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

G-3

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4

THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS. THE CONTRACTOR SHALL PROVIDE OR COORDINATE WITH THE GENERAL CONTRACTOR PROVISIONS FOR BLOCKOUTS OR CORE DRILLS THROUGH STRUCTURE.

G-5

THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

G-6

MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL SMOKE AND FIRE DAMPERS AS REQUIRED BY LOCAL CODES AND AUTHORITIES.

G-7

SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.

G-8

PROVIDE AND INSTALL BALANCING DAMPERS IN ALL SUPPLY AND EXHAUST AIR BRANCH DUCTS. BALANCE TO CFM SHOWN ON PLAN.

G-9

PROVIDE TURNING VANES IN ALL ELBOWS OF RECTANGULAR DUCT.

G-10

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

G-11

THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWING BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.

G-12

C.F.M. LISTED IS ACTUAL AIR.

G-13

SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

G-14

CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

G-15

ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC WITH UTAH ANNOTATIONS AND LOCAL AUTHORITY REQUIREMENTS.

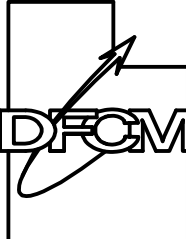
G-16

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF ALL SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.

G-17

ALL PIPING, MATERIALS, ETC. SHALL BE NEW AND DOMESTIC MADE UNLESS SPECIFICALLY AUTHORIZED IN WRITING PRIOR TO BID.

State of Utah  
Department of Administrative Services



Division of Facilities  
Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114  
Phone: (801) 538 - 3018  
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1304 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 466-4021 FAX 466-8536  
EMAIL: [excellence@whw-engineering.com](mailto:excellence@whw-engineering.com)

PROJECT NAME & ADDRESS

**DAVIS ATC  
HVAC UPGRADE  
BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

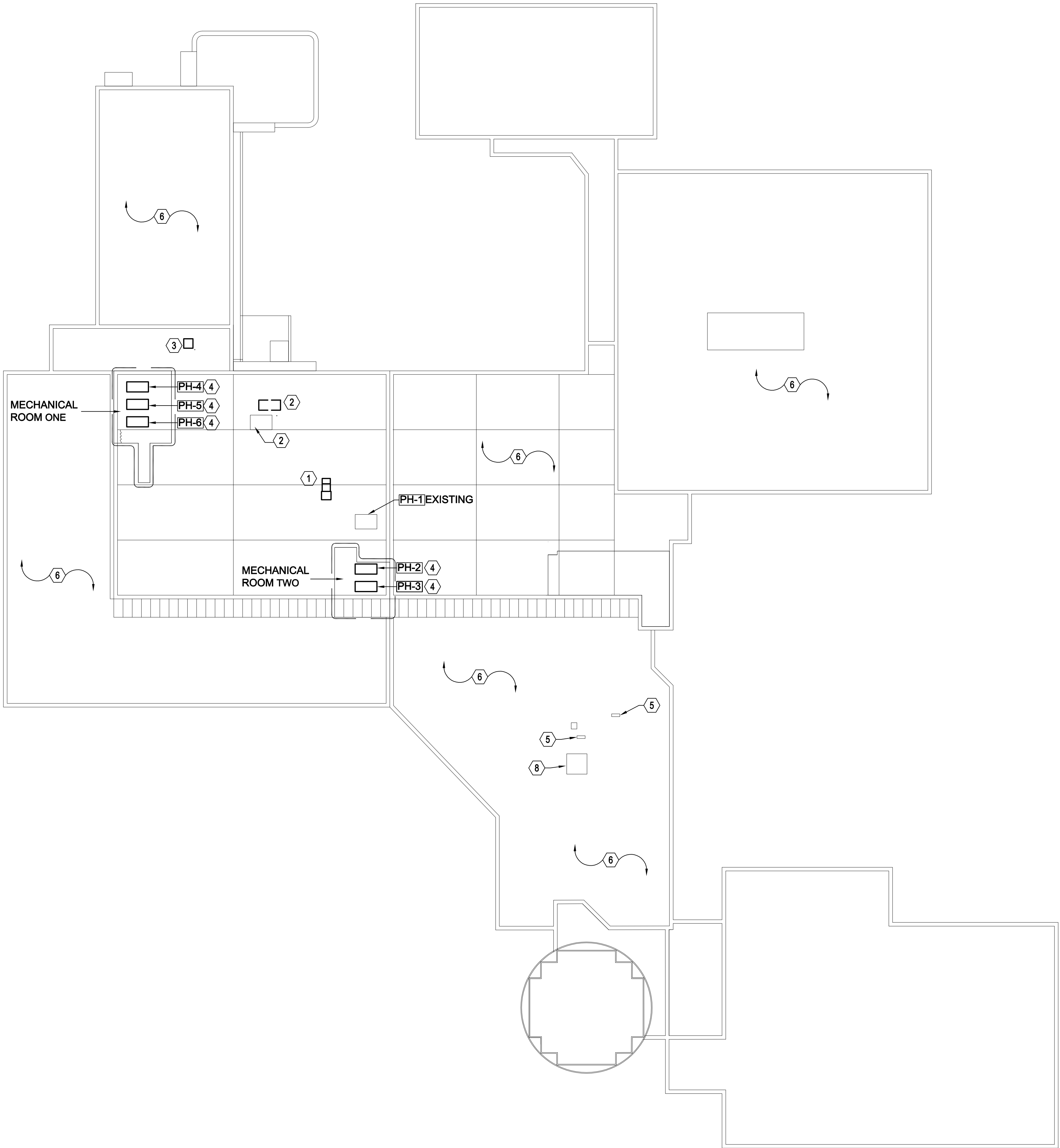
MARK	DATE	REVISION

PROJECT MANAGER: WP	
DRAWN BY: STAFF	
CHECKED BY: SLW	
DATE: 10/10/07	
WHW JOB NO.: 07050	
SHEET TITLE	

**MECHANICAL GENERAL  
NOTES AND LEGEND**

SHEET NO.

**MG001**



**A2** MECHANICAL ROOF DEMOLITION PLAN  
SCALE: 1/32" = 1'-0"

SHEET NOTES

- 1 REMOVE EXISTING EVAPORATIVE COOLER. PROTECT DUCT WORK TO RE-CONNECT TO NEW RTU. PROVIDE INSULATED SHEER METAL CAP WHERE COOLER IS REMOVED. SEAL WATER TIGHT.
- 2 REMOVE EXISTING HEATING UNIT. PROVIDE INSULATED SHEET METAL CAP AT ROOF. SEAL WATER TIGHT.
- 3 REMOVE AND REPLACE EXISTING HEATING ONLY MAKE-UP AIR UNIT AND CURB.
- 4 ADDITIVE ALTERNATE #1: REMOVE AND REPLACE EXISTING LOUVERS AT EXISTING ROOF MOUNTED PENTHOUSE.
- 5 EXISTING CONDESING UNITS FOR COMPUTER ROOM COOLING UNITS SHALL REMAIN.
- 6 ALL OTHER EQUIPMENT, PIPING, ETC. ON ROOF NOT SHOWN SHALL REMAIN.
- 7 EXISTING ROOFTOP UNIT SHALL REMAIN.
- 8 PROTECT EXISTING SATELITE DISH DURING CONSTRUCTION.

- GENERAL NOTE:
- 1. FIELD VERIFY EXACT LOCATIONS OF EXISTING EQUIPMENT PRIOR TO STARTING WORK.
  - 2. THIS CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING EQUIPMENT, PIPING, ROOFING ETC. DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THIS PROJECT SHALL BE REPAIRED BY THIS CONTRACTOR.
  - 3. ROOF CUTTING AND PATCHING SHALL MAINTAIN ROOF WARRANTY. ROOFING SHALL BE DONE BY REDD ROOFING OR EQUAL ON DFCM APPROVED ROOFING LIST.

State of Utah  
Department of Administrative Services

Division of Facilities  
Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114  
Phone: (801) 538 - 3018  
Fax: (801) 538 - 3267

Internet: <http://www.dfcml.state.ut.us>

CONSULTANTS



**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801)466-4021 FAX 466-8536  
EMAIL: excellence@whw-engineering.com

PROJECT NAME & ADDRESS

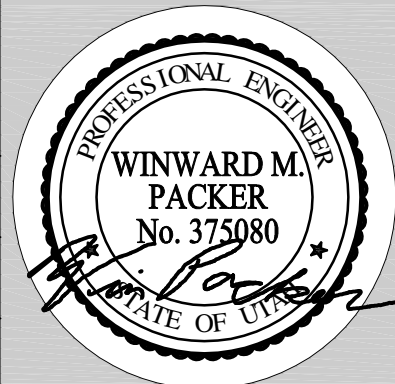
**DAVIS ATC  
HVAC UPGRADE  
BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

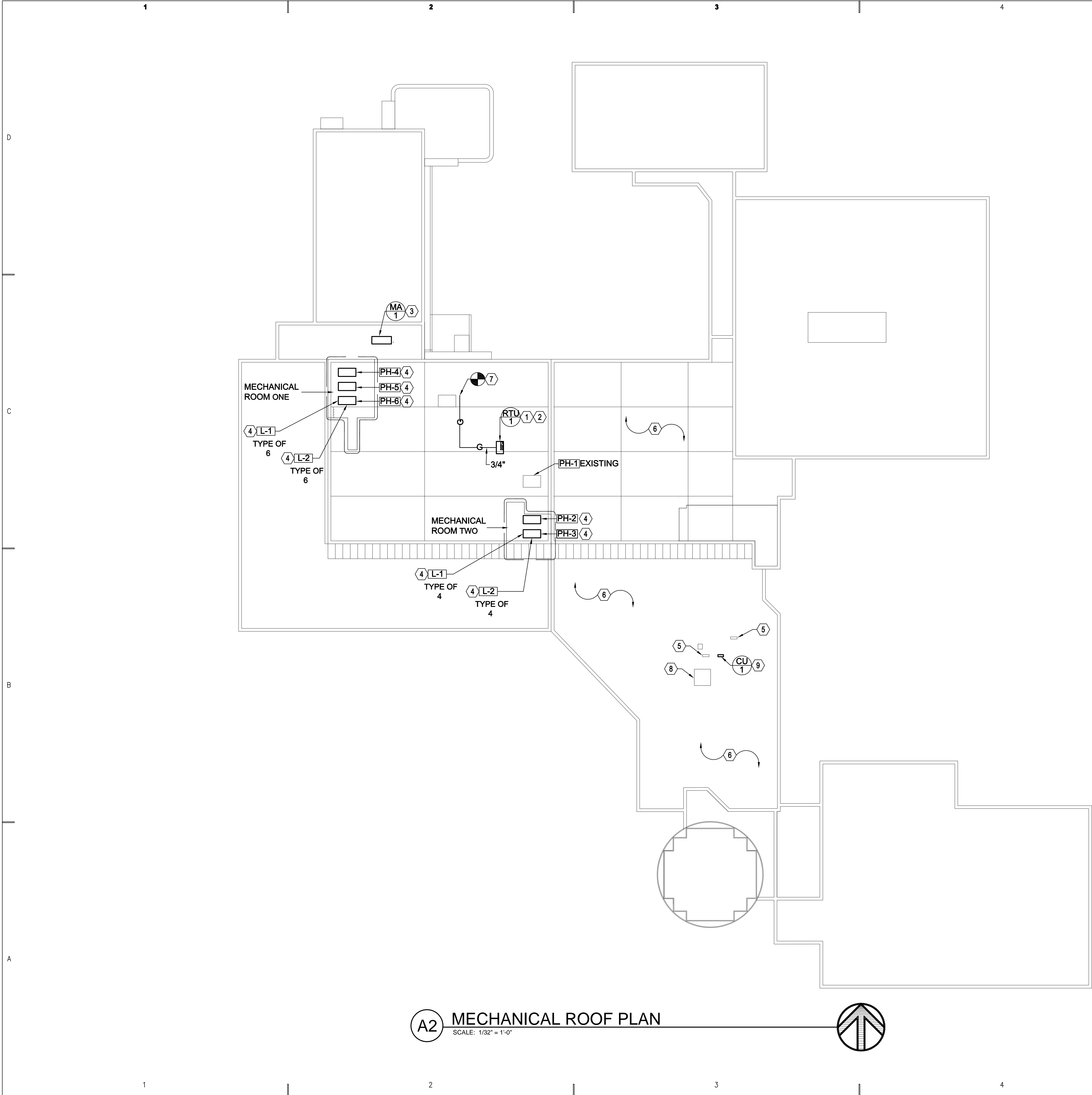
PROJECT MANAGER:  
**WP**  
DRAWN BY:  
**STAFF**  
CHECKED BY:  
**SLW**  
DATE:  
**10/10/07**  
WHW JOB NO.:  
**07050**



SHEET TITLE  
**MECHANICAL ROOF  
DEMOLITION PLAN**

SHEET NO.  
**MD101**





**A2** MECHANICAL ROOF PLAN  
SCALE: 1/32" = 1'-0"

SHEET NOTES

1. INSTALL OWNER SUPPLIED PACKAGED ROOFTOP UNIT AT THIS APPROXIMATE LOCATION. FIELD VERIFY. CONNECT SUPPLY DUCT TO EXISTING SUPPLY DROP FROM REMOVED EVAP. COOLER. CUT NEW PENETRATION IN ROOF FOR NEW RETURN AIR DUCT. PROVIDE ELBOW AND RODENT SCREEN AT RA DUCT IN SPACE BELOW. ROOFTOP UNIT SHALL BE PROVIDED BY OWNER, CURB SHALL BE PROVIDED BY CONTRACTOR. PROVIDE ROOFING MODIFICATIONS AS NECESSARY FOR NEW CURB. SEE DETAILS AND SCHEDULES.
2. PROVIDE NEW ELECTRICAL SERVICE TO NEW ROOFTOP UNIT. REPLACE EVAP. COOLER BREAKER, AND PULL NEW POWER TO NEW ROOFTOP. PROVIDE NEW DISCONNECT AT UNIT.
3. PROVIDE NEW HEATING ONLY MAKE-UP AIR UNIT AND CURB. RE-CONNECT TO EXISTING SUPPLY DUCT, GAS PIPING, ELECTRICAL CONNECTIONS, AND CONTROLS. PROVIDE ROOFING MODIFICATIONS AS NECESSARY FOR NEW CURB
4. BASE BID: REMOVE EXISTING WEATHER HOOD AT EXISTING ROOF MOUNTED PENTHOUSE UNITS. ADDITIVE ALTERNATE #1: REPLACE EXISTING LOUVERS AT EXISTING ROOF MOUNTED PENTHOUSES. FIELD VERIFY EXACT LOUVER DIMENSIONS BEFORE ORDERING.
5. EXISTING DATA ROOM CONDENSING UNITS SHALL REMAIN.
6. EXISTING ROOF EQUIPMENT NOT SHOWN SHALL REMAIN
7. PROVIDE NEW GAS PIPING FROM EXISTING ROOF PENETRATION TO NEW ROOFTOP UNIT.
8. PROTECT SATELITE DISH DURING CONSTRUCTION.
9. PROVIDE NEW SPLIT SYSTEM CONDENSING UNIT FOR DATA ROOM. PROVIDE NEW ELECTRICAL SERVICE. TIE INTO EXISTING PANEL IN DATA ROOM. PROVIDE ROOFING MODIFICATIONS AS NECESSARY FOR NEW CURB.

GENERAL NOTE:

1. FIELD VERIFY ALL EXISTING CONDITIONS.
2. ELECTRICAL WORK SHALL BE DONE BY A DESIGN BUILD LICENSED ELECTRICIAN. E.C. SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS, AND INSTALL ALL NEW WORK IN COMPLIANCE WITH NEC CODES AND DFCM REQUIREMENTS.
3. ALL ROOFING MODIFICATIONS SHALL BE DONE BY OWNERS APPROVED ROOFING CONTRACTOR.

**State of Utah**  
Department of Administrative Services

**Division of Facilities**  
Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114  
Phone: (801) 538 - 3018  
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 466-4021, FAX 466-8536  
EMAIL: [excellence@whw-engineering.com](mailto:excellence@whw-engineering.com)

PROJECT NAME & ADDRESS

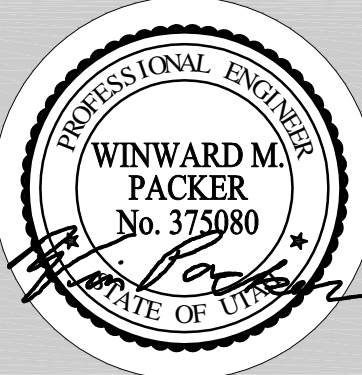
**DAVIS ATC**  
**HVAC UPGRADE**  
**BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

PROJECT MANAGER:  
**WP**  
DRAWN BY:  
**STAFF**  
CHECKED BY:  
**SLW**  
DATE:  
**10/10/07**  
WHW JOB NO.:  
**07050**

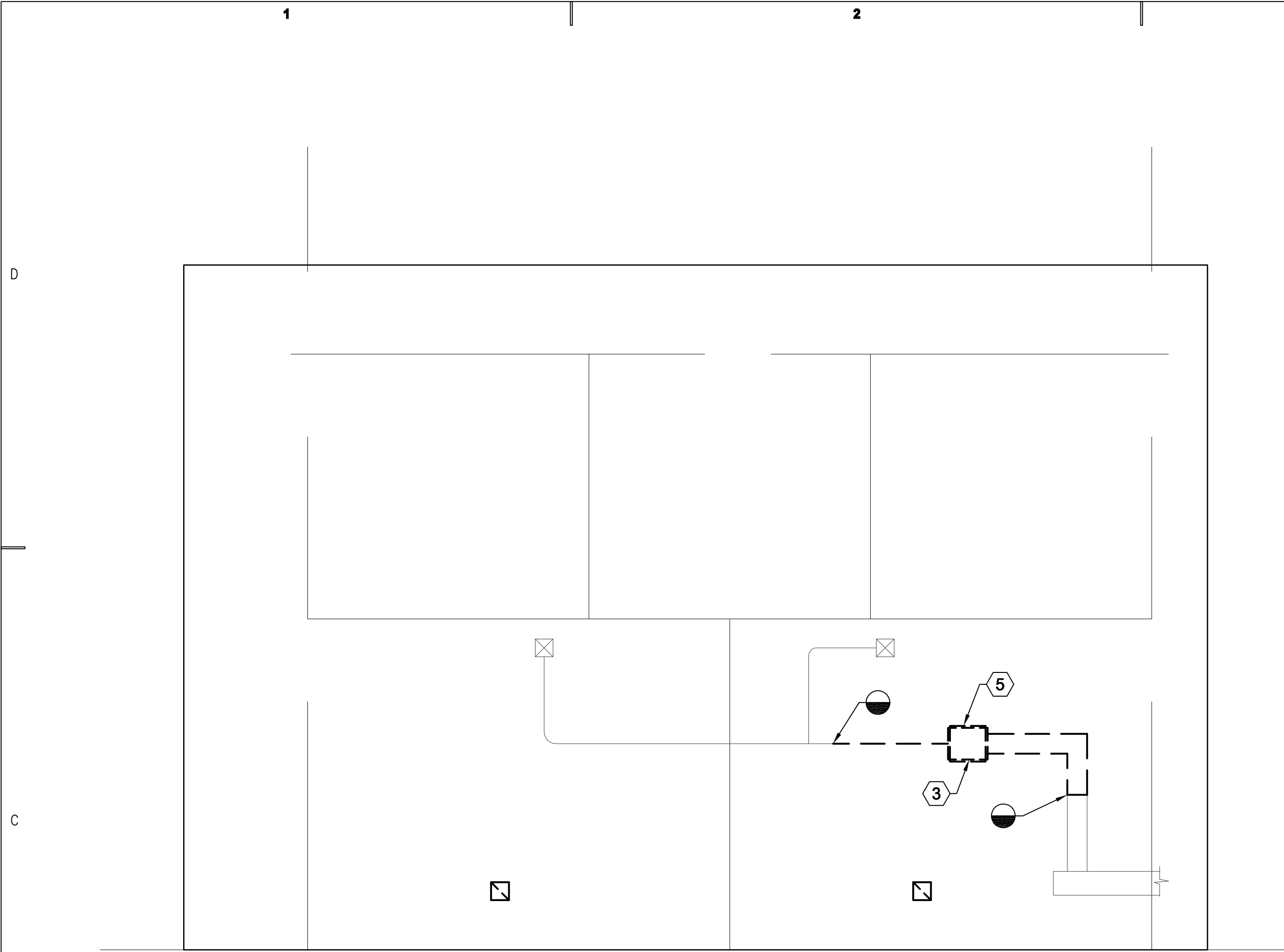


SHEET TITLE

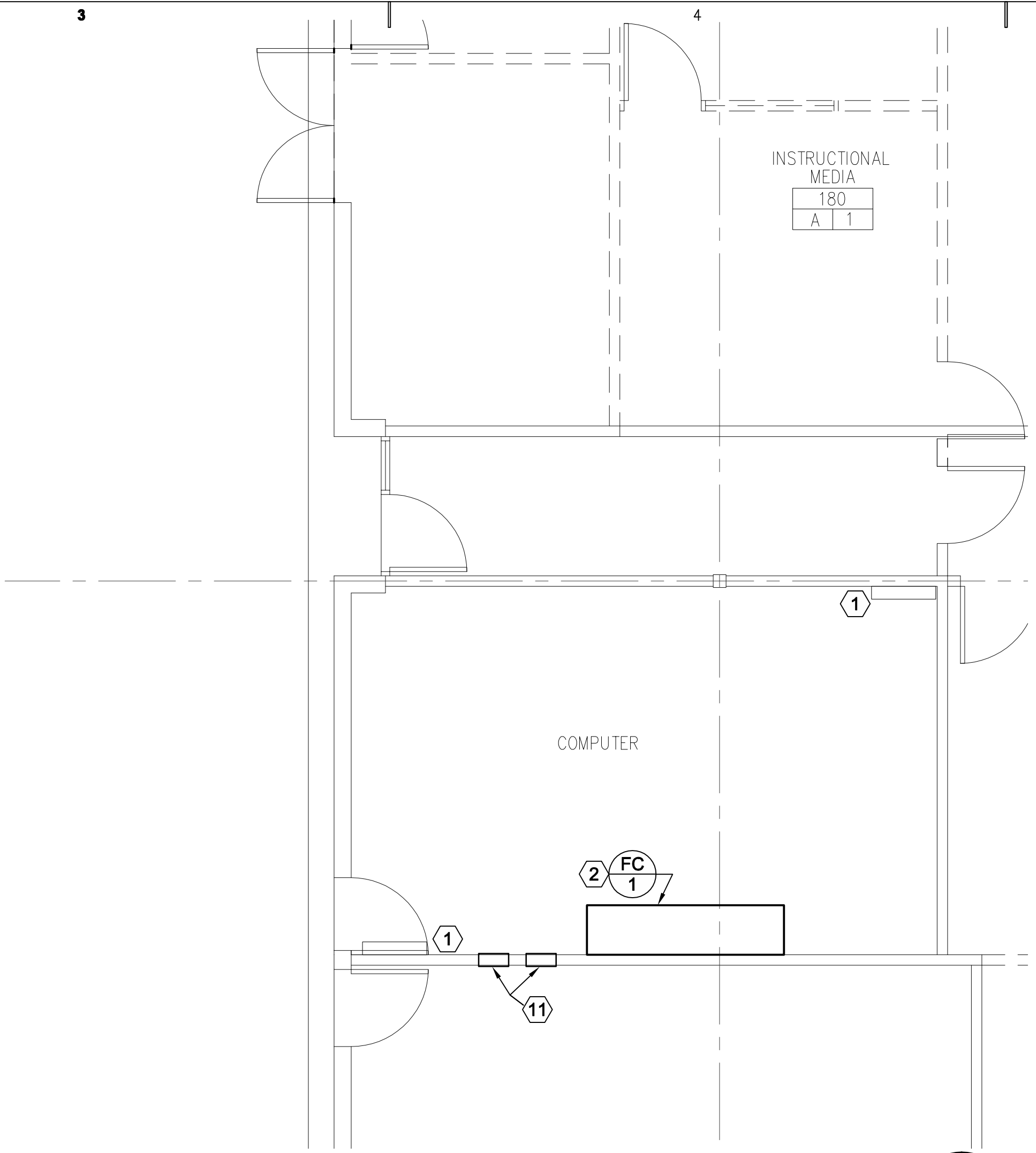
**MECHANICAL ROOF PLAN**

SHEET NO.

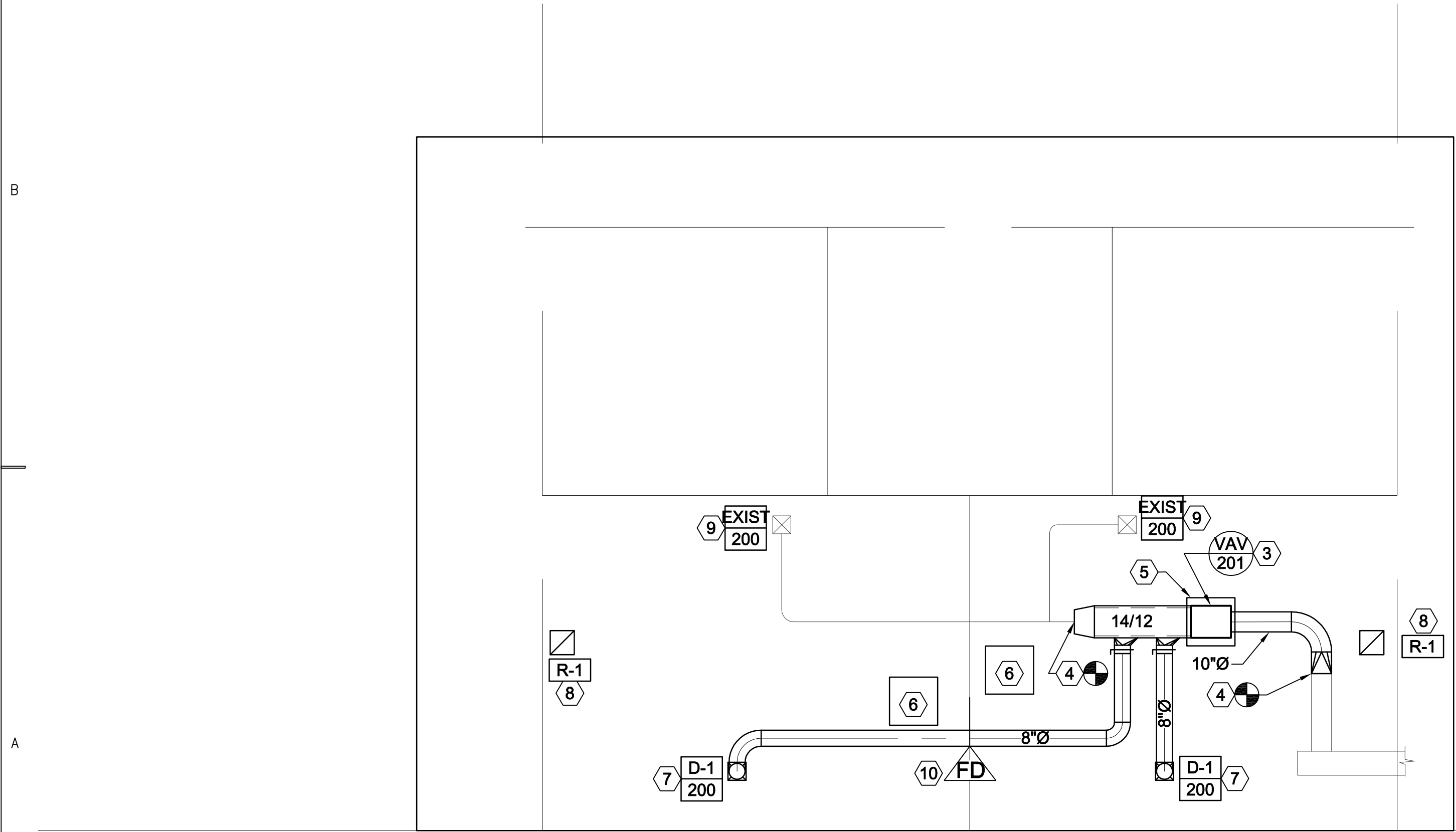
**ME101**



**B1** ROOM 2006B AND 2002B DEMOLITION PLAN  
SCALE: 1/4" = 1'-0"



**B3** 1ST FLOOR DATA ROOM MECHANICAL PLAN  
SCALE: 1/4" = 1'-0"



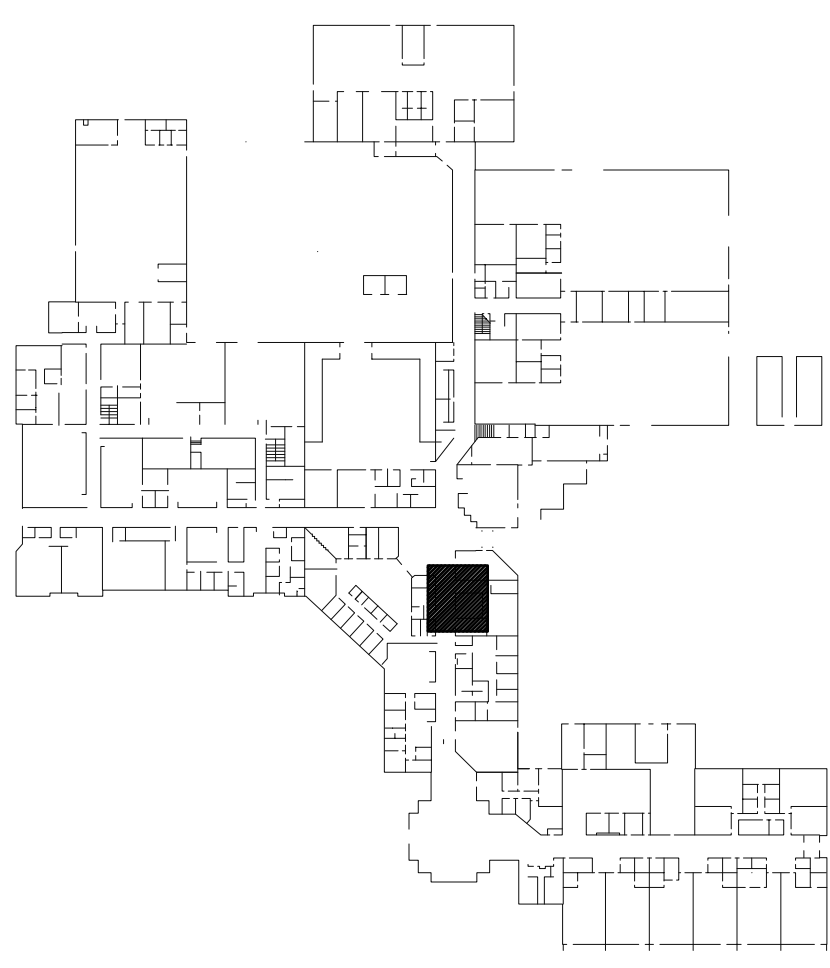
**A2** ROOM 2006B AND 2002B NEW MECHANICAL PLAN  
SCALE: 1/4" = 1'-0"

SHEET NOTES

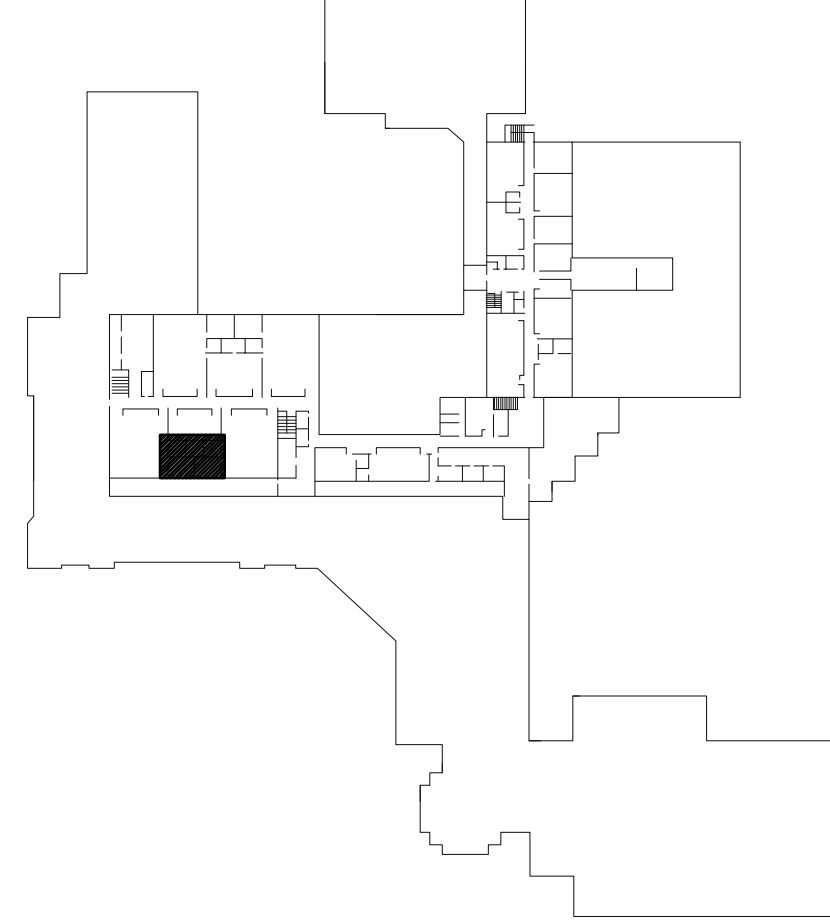
- EXISTING SPLIT SYSTEM FAN COIL IN DATA ROOM SHALL REMAIN.
- PROVIDE NEW SPLIT SYSTEM FAN COIL UNIT IN EXISTING DATA ROOM. PROVIDE ALL ELECTRICAL POWER, CONTROLS, CONDENSATE PUMP, AND PIPING AS NECESSARY. SUPPORT FROM STRUCTURE ABOVE CEILING.
- REMOVE EXISTING 5" VAV BOX, AND REPLACE WITH OWNER SUPPLIED 10" VAV BOX. RE-CONNECT TO EXISTING MEDIUM PRESSURE DUCT, AND EXISTING HOT WATER PIPING AND CONTROLS.
- PROVIDE LOW PRESSURE DUCT TRANSITION TO CONNECT TO EXISTING 10" X 10" DUCT. FIELD VERIFY.
- REPLACE 18/18 ACCESS PANEL WITH 24/24 ACCESS PANEL.
- PROVIDE NEW 24"x24" CEILING ACCESS PANELS TO MATCH EXISTING AS NEEDED TO INSTALL DUCT WORK.
- PROVIDE NEW CEILING DIFFUSER.
- PROVIDE NW CEILING RETURN.
- RE-BALANCE EXISTING CEILING DIFFUSER AS SHOWN.
- PROVIDE FIRE DAMPER AT WALL PENETRATION.
- EXISTING ELECTRICAL PANELS. PROVIDE NEW CIRCUIT IN SINGLE PHASE PANEL FOR NEW SPLIT SYSTEM/

**GENERAL NOTE:**

- FIELD VERIFY ALL EXISTING CONDITIONS.
- ELECTRICAL WORK SHALL BE DONE BY A DESIGN BUILD LICENSED ELECTRICIAN. E.C. SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS, AND INSTALL ALL NEW WORK IN COMPLIANCE WITH NEC CODES AND DFCM REQUIREMENTS.



1ST FLOOR KEY PLAN



2ND FLOOR KEY PLAN

**State of Utah**  
Department of Administrative Services

**Division of Facilities**  
Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114  
Phone: (801) 538 - 3018  
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS

**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 466-4021 FAX 466-8536  
EMAIL: [excellence@whw-engineering.com](mailto:excellence@whw-engineering.com)

PROJECT NAME & ADDRESS

**DAVIS ATC**  
**HVAC UPGRADE**  
**BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

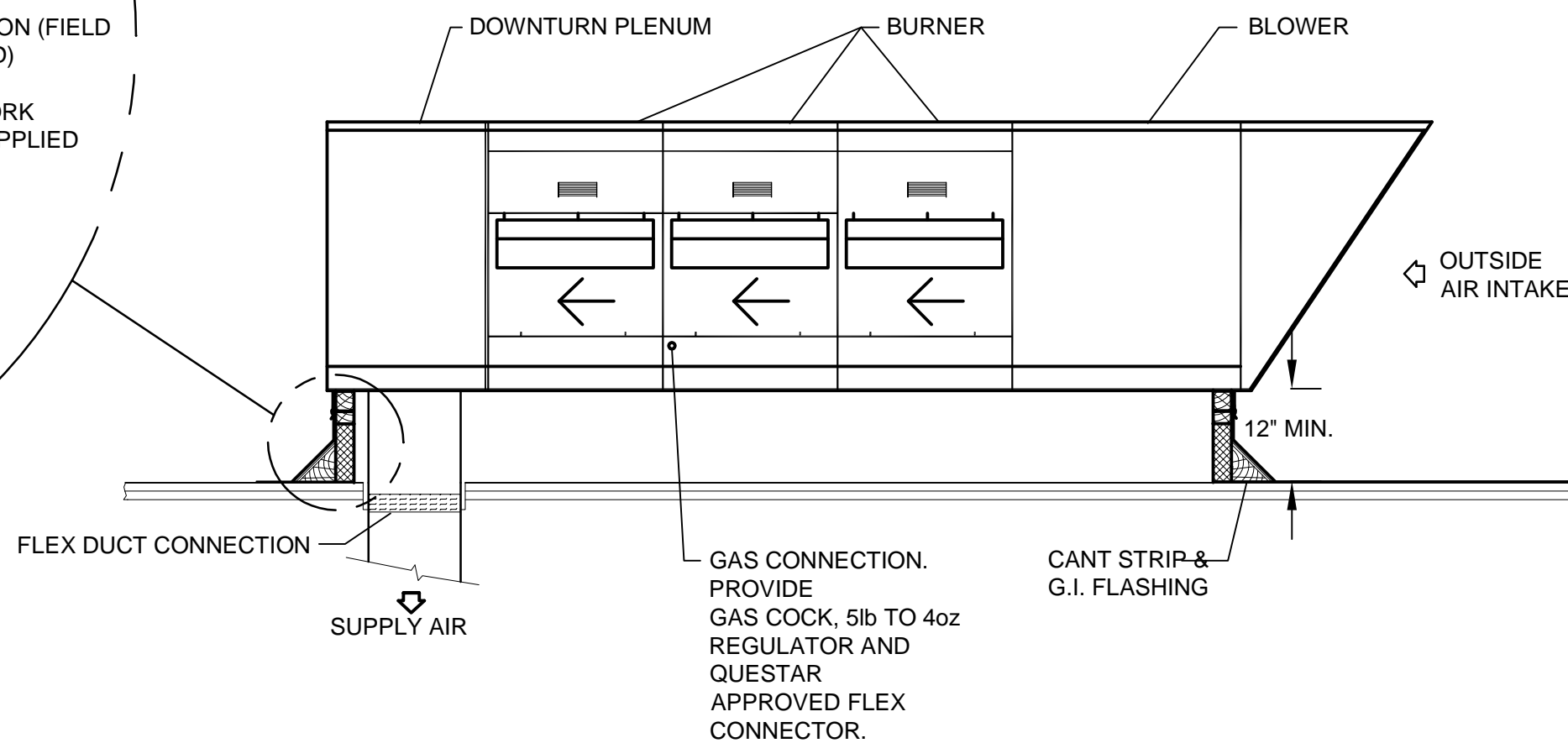
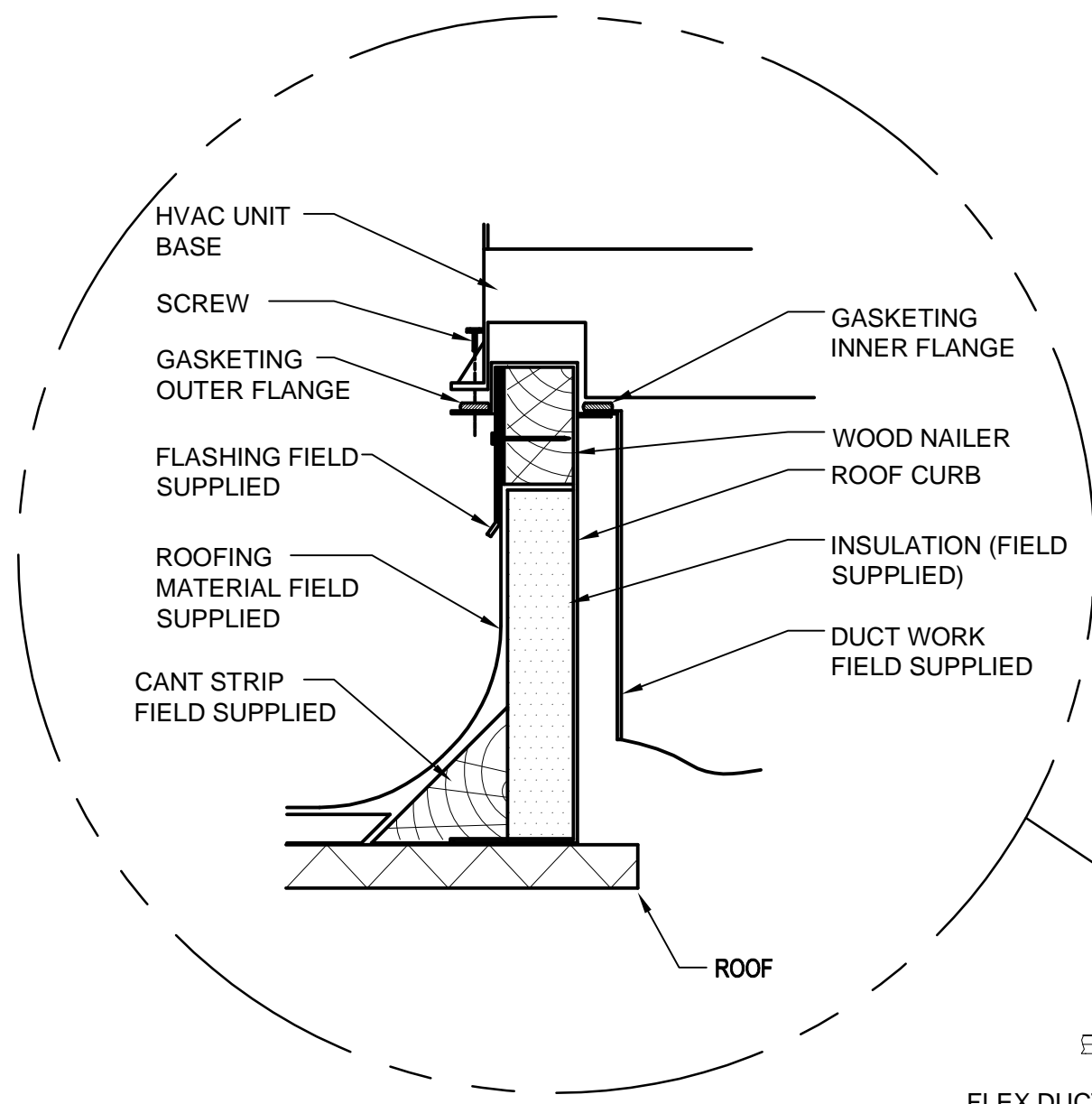
PROJECT MANAGER:  
WP  
DRAWN BY:  
STAFF  
CHECKED BY:  
SLW  
DATE:  
10/10/07  
WHW JOB NO.:  
07050  
SHEET TITLE



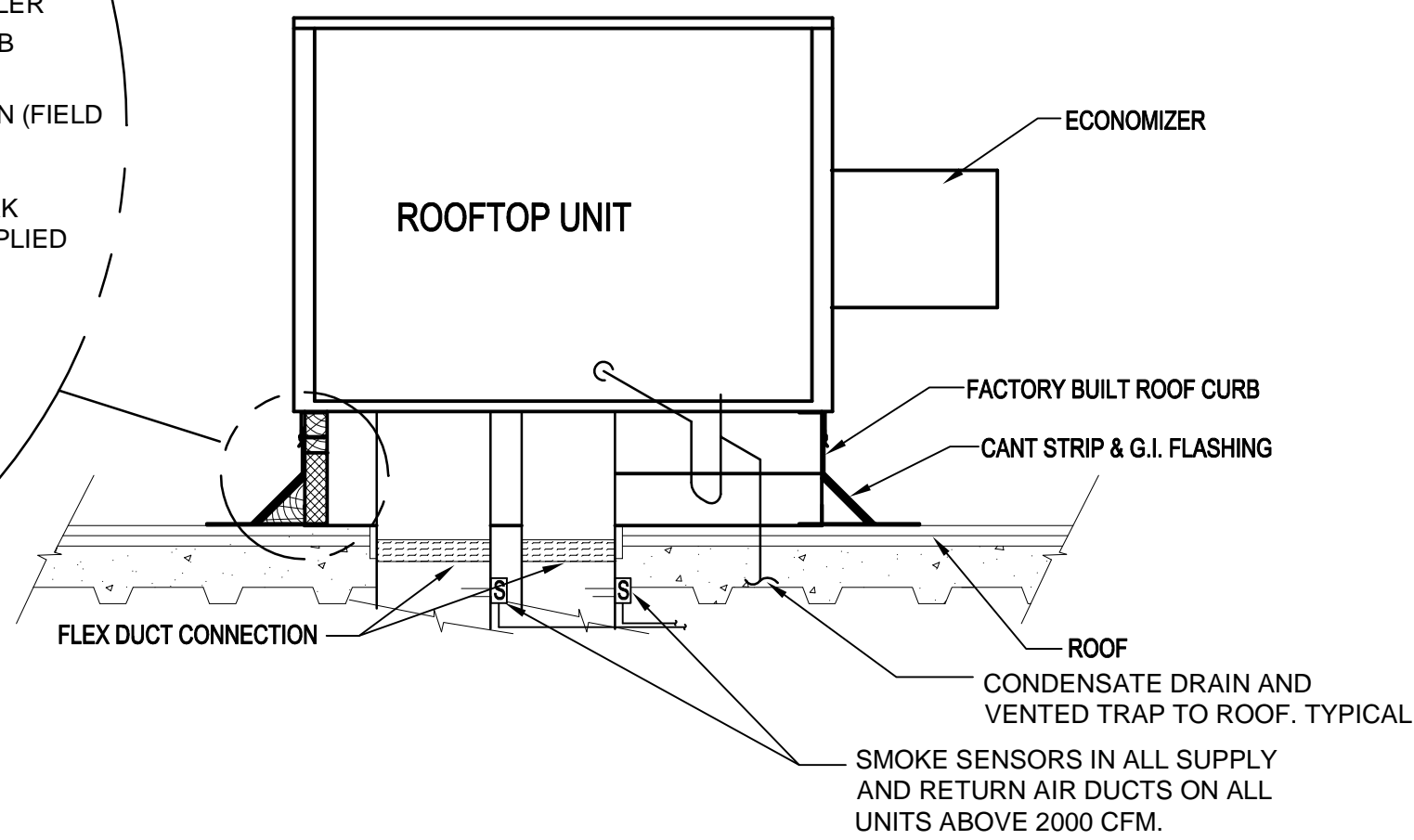
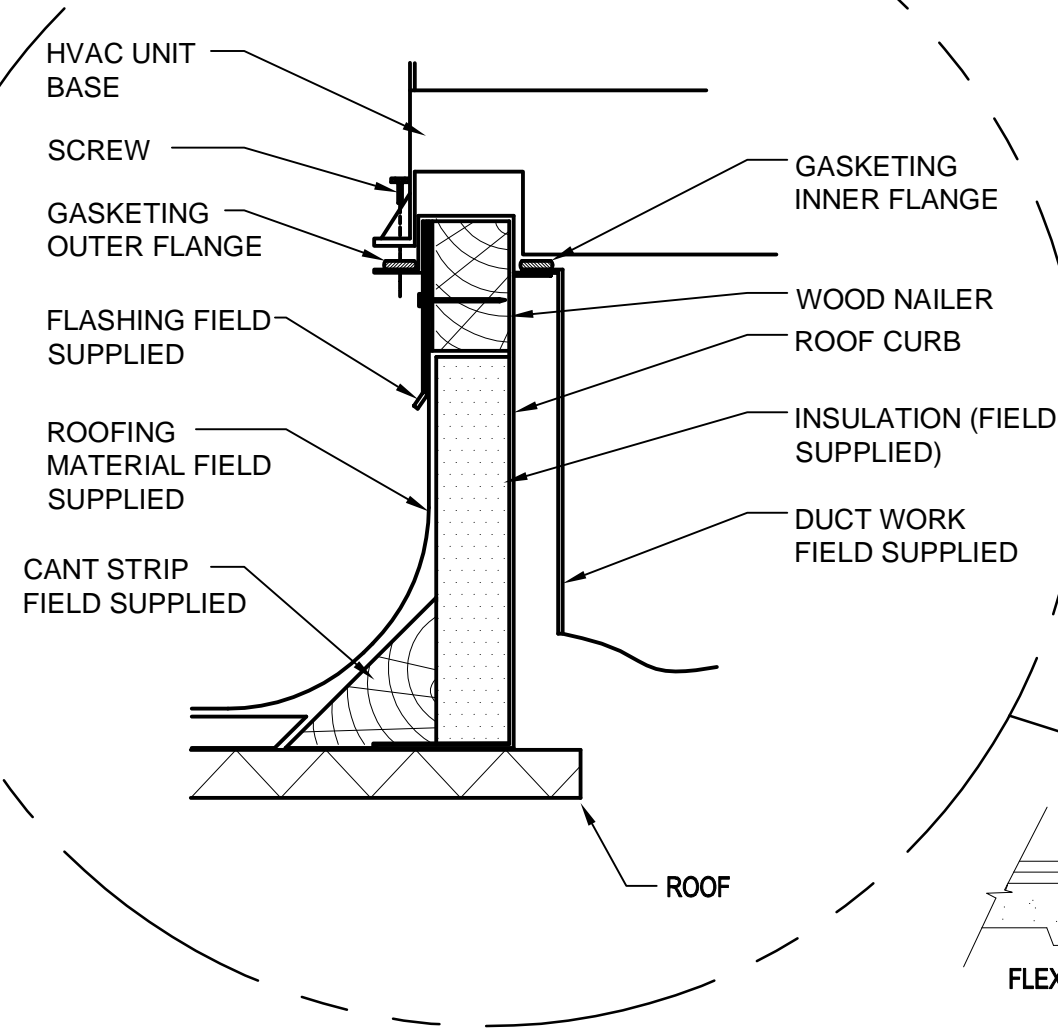
**LARGE SCALE NEW**  
**MECHANICAL PLANS**

SHEET NO.

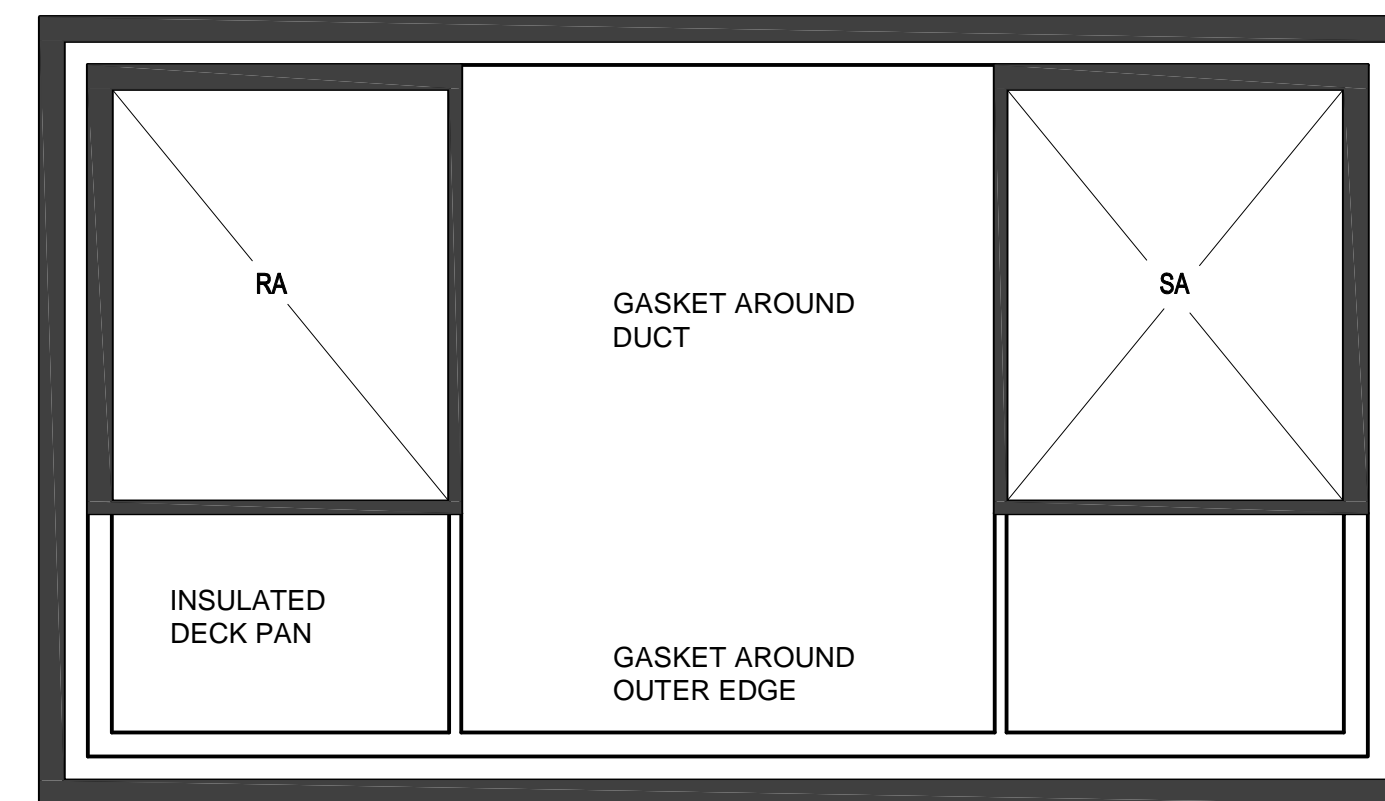
**ME401**



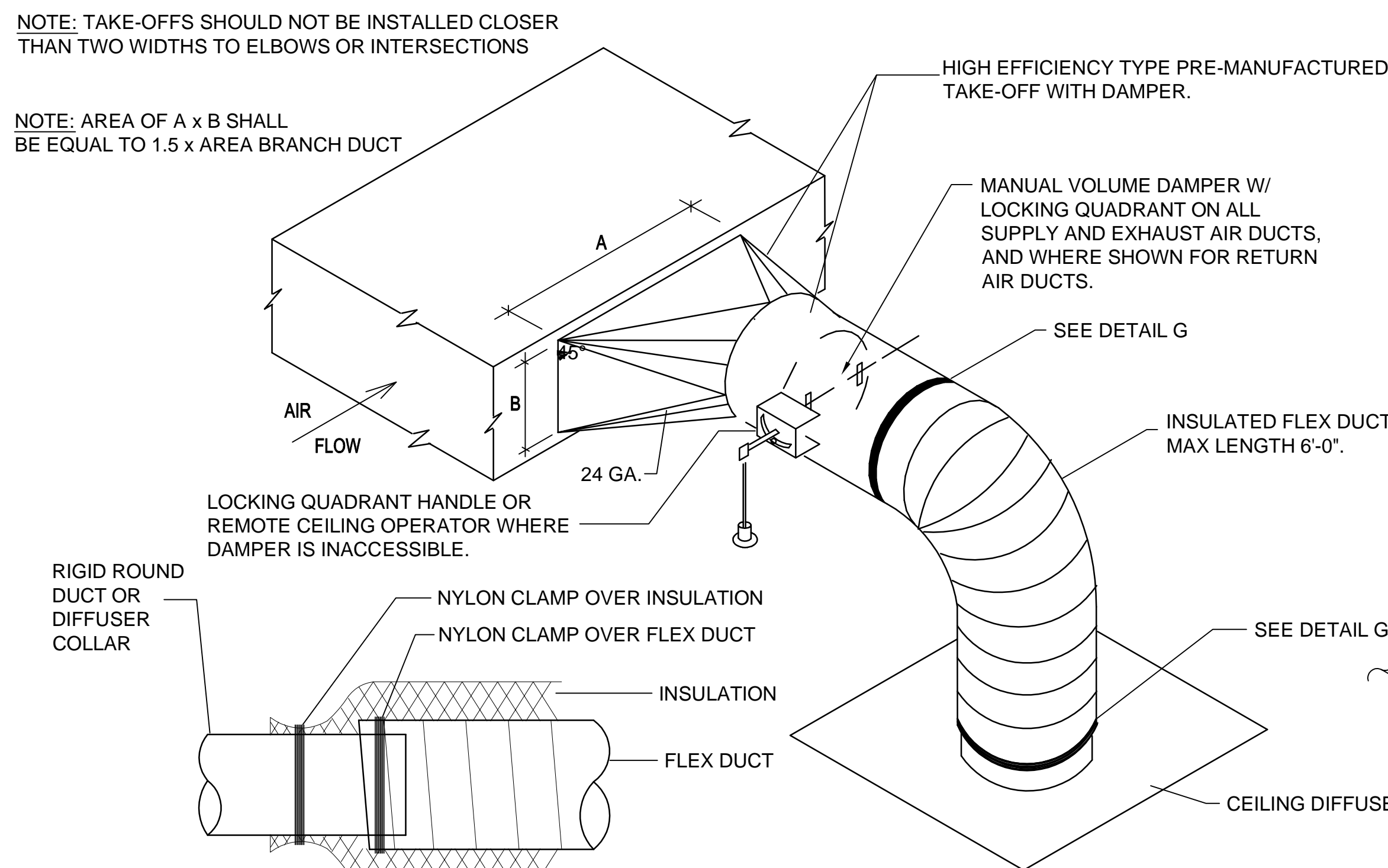
C2 MAKE-UP AIR UNIT DETAIL  
SCALE: NONE



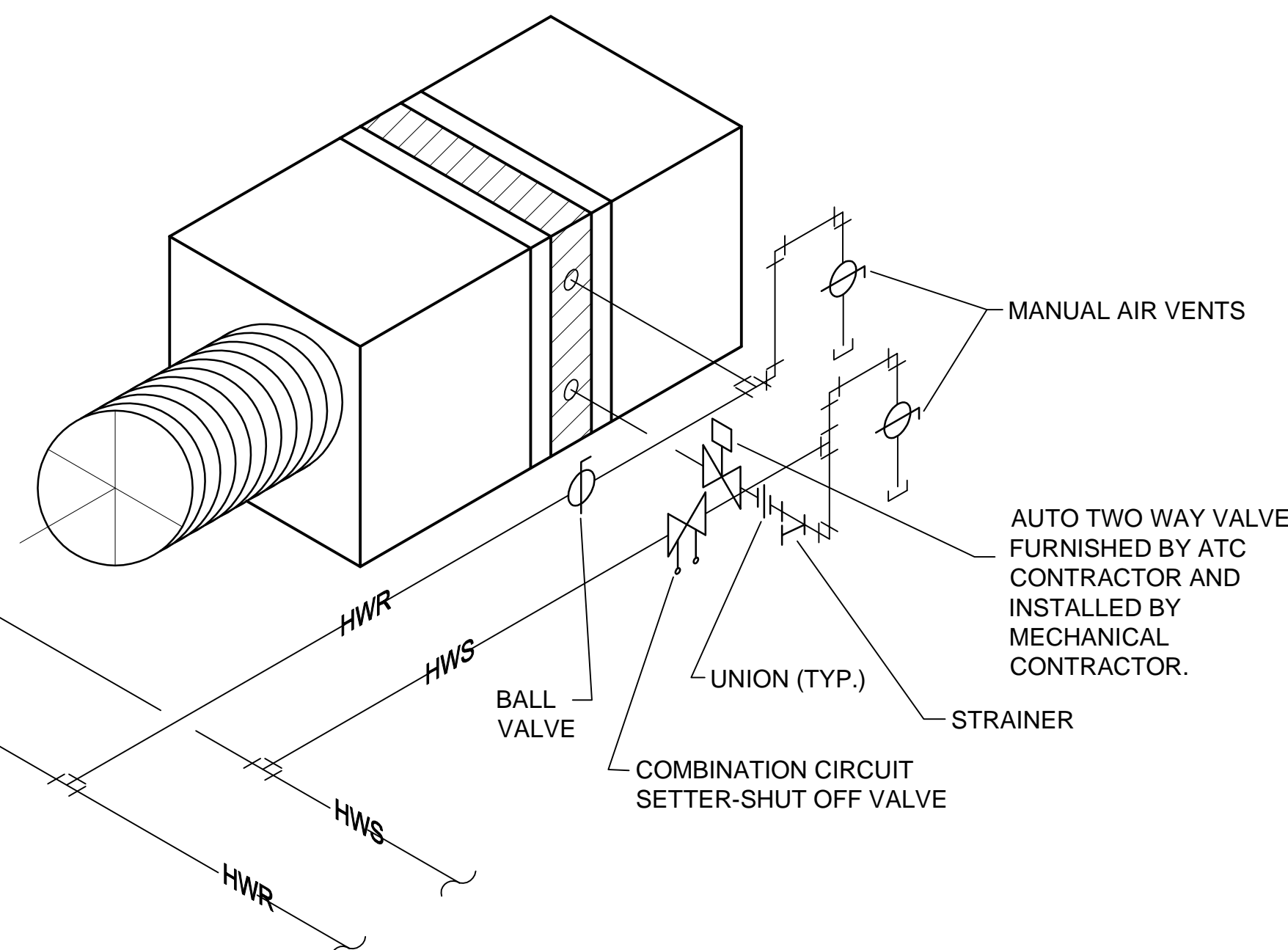
C4 ROOFTOP UNIT DETAIL  
SCALE: NONE



B4 PACKAGED ROOF CURB DETAIL  
SCALE: NONE

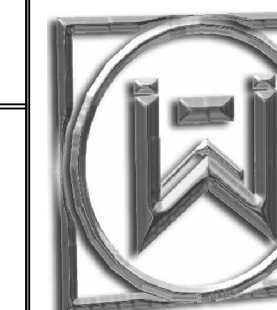


A2 SQUARE-TO-ROUND TAKE-OFF DETAIL  
SCALE: NONE



A4 VAV BOX (W/ HEATING COIL) HOT WATER PIPING DETAIL  
SCALE: NONE

CONSULTANTS



**WHW  
ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 465-4021, FAX 468-5535  
EMAIL: excellence@whw-engineering.com

PROJECT NAME & ADDRESS

**DAVIS ATC  
HVAC UPGRADE  
BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

PROJECT MANAGER:

WP

DRAWN BY:

STAFF

CHECKED BY:

SLW

DATE:

10/10/07

WHW JOB NO.:

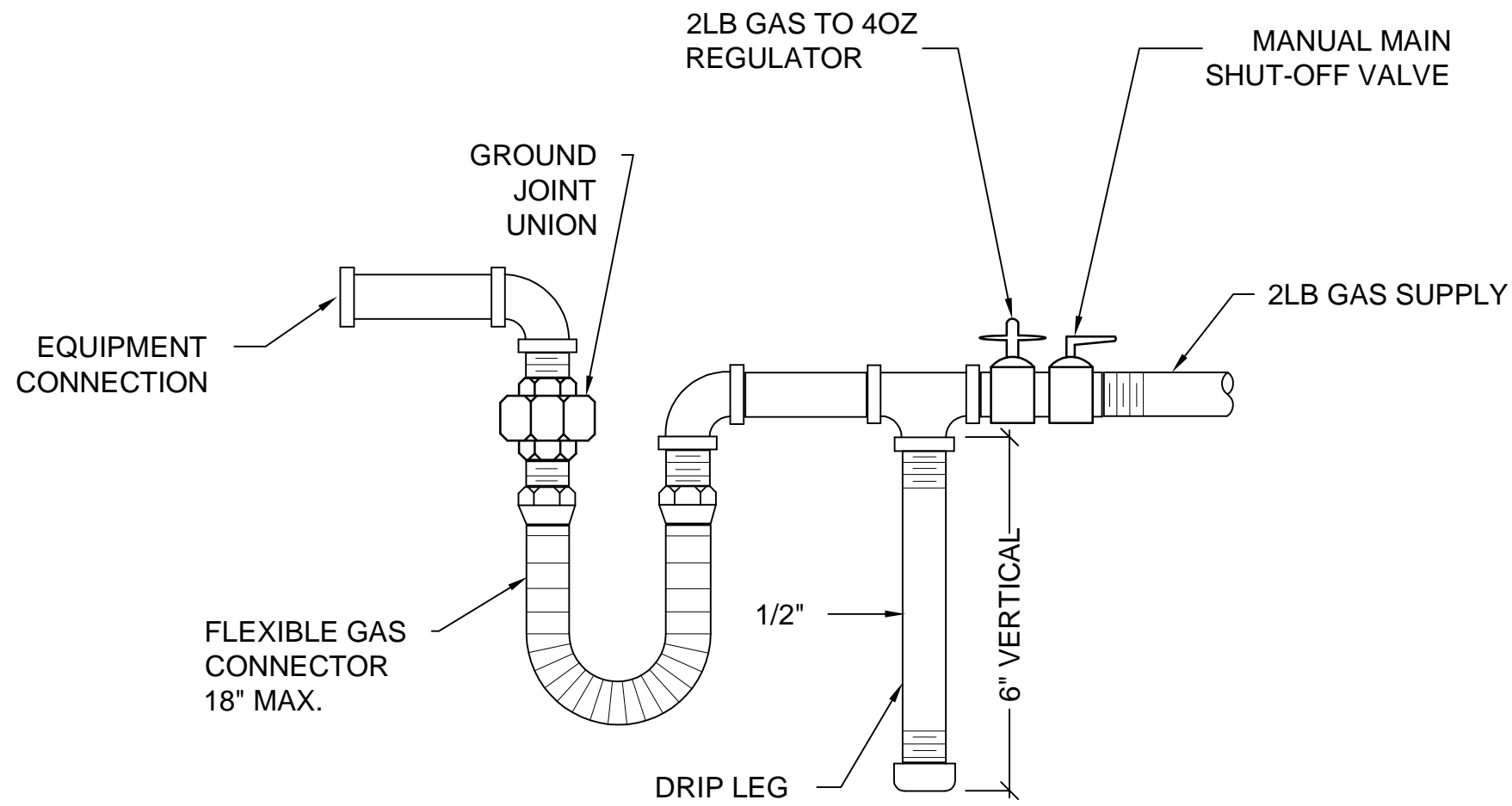
07050

SHEET TITLE

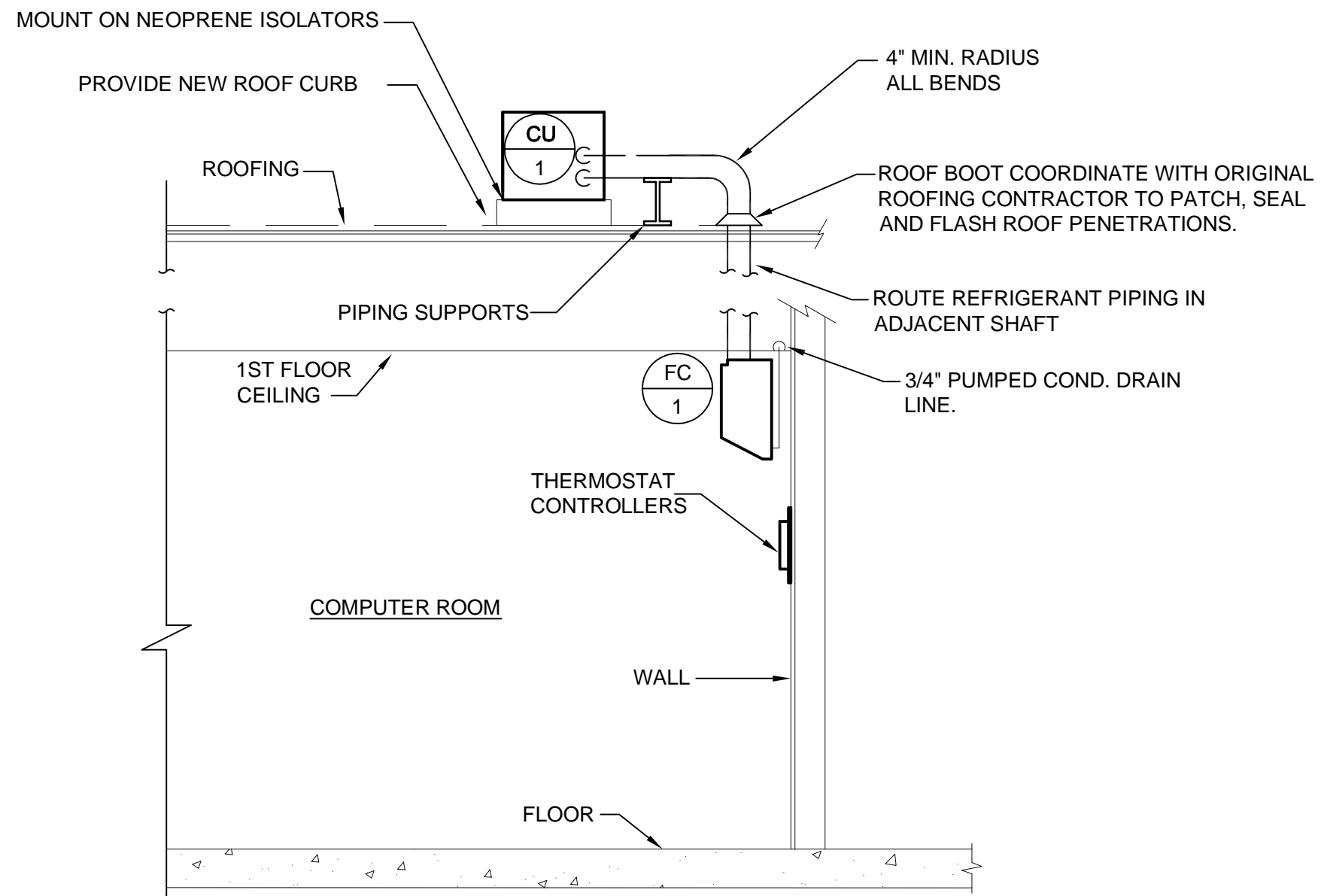
**MECHANICAL DETAILS**

SHEET NO.

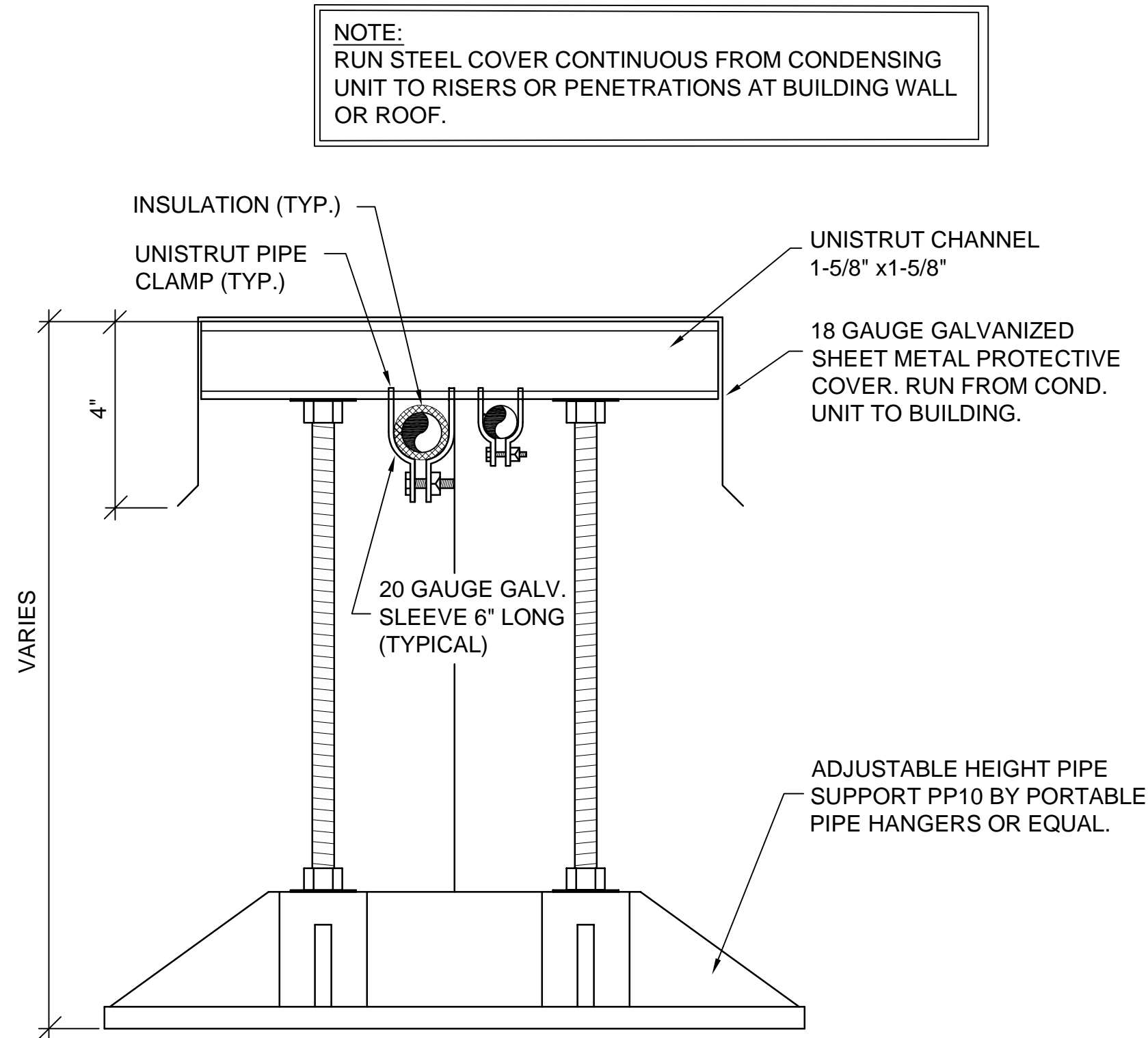
**ME501**



**C2** **GAS LINE CONNECTION DETAIL**  
SCALE: NONE



**C4** **WALL MOUNT AC UNIT DETAIL**  
SCALE: NONE



**A4** **EXTERIOR REFRIGERANT PIPE SUPPORT**  
SCALE: NONE

CONSULTANTS



**WHW**  
**ENGINEERING INC.**  
PROFESSIONAL MECHANICAL ENGINEERING  
1304 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801) 466-4021, FAX 466-8836  
EMAIL: [excellence@whw-engineering.com](mailto:excellence@whw-engineering.com)

PROJECT NAME & ADDRESS

**DAVIS ATC  
HVAC UPGRADE  
BUILDING C**

**DFCM No. 07174220**

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

PROJECT MANAGER: <b>WP</b>	
DRAWN BY: <b>STAFF</b>	
CHECKED BY: <b>SLW</b>	
DATE: <b>10/10/07</b>	
WHW JOB NO.: <b>07050</b>	
SHEET TITLE	

**MECHANICAL DETAILS**

SHEET NO.

**ME502**

1

2

3

4

ROOFTOP AIR CONDITIONER SCHEDULE (GAS HEAT)

SYMBOL	MANUFACTURER & MODEL NUMBER	SA CFM	OSA CFM	E.S.P. IN W.G.	HEATING	COOLING			ELECTRICAL								EER/ SEER	OPER. WT. (LBS)	COMMENTS	SCHEDULE NOTES
					TOT. MIN. INPUT MBH	AMB. AIR (DB)	AMB. AIR (WB)	MIN. TOTAL MBH	V - Ø - Hz	COMPRESSOR #	COMPRESSOR TOTAL RLA	COMPRESSOR TOTAL LRA	EVAP BLOWER HP	POWER EXHAUST HP	MCA	MOCP				
RT 1	LENNOX LGA120H2BS	4000	1000	1.0	130	95	67	120	208-3-60	2	34.6	246	3	-	55	70	11.0	1500	OWNER PROVIDED	1,2
1. ROOFTOP UNIT PROVIDED BY OWNER.																				
2. ROOFTOP UNIT CURB BY CONTRACTOR.																				

VAV BOX SCHEDULE

SYMBOL	SERVES	INLET DIA. (INCHES)	COOLING			HEATING (40° DELTA T)								NC LEVEL	MANUF. MODEL #	SCHEDULE NOTES
			MAX CFM	MIN CFM	MX APD (IN)	COIL EAT	COIL LAT	MAX CFM	COIL BTUH	FLOW GPM	EWT	(FT) PD	ROWS			
VAV 101	2006B	10	800	250											OWNER PROVIDED	
1. 10" BOX WITH 2 ROW COIL PROVIDED BY OWNER.																

SPLIT SYSTEM SCHEDULE - INDOOR UNIT

ITEM NO.	MANUFACTURER AND MODEL NO.	AREA & ROOMS SERVED	CFM	ELECTRICAL			MOCP	SPEED	OSA CFM (MIN)	OPER WT. LBS.	COMMENTS
				MCA	FLA	V-Ø-HZ					
FC 1	CARRIER QAB060	COMPUTER ROOM	1220	3.3	2.6	208-1-60	15	MED	-	180	INSTALL TO MANUF. RECOMMENDATIONS

SPLIT SYSTEM SCHEDULE - OUTDOOR UNIT

ITEM NO.	MANUFACTURER AND MODEL NO.	AREA & ROOMS SERVED	CAPACITY BTU/HR		SEER	ELECTRICAL						OPER WT. LBS.	COMMENTS
			HEATING	COOLING		MCA	FLA	V-Ø-HZ	RLA	LRA	MOCP		
CU 1	CARRIER HDC060	COMPUTER ROOM	-	58,000	12	36.6	1.45	208-1-60	28.9	165	60	290	FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS

REGISTER, LOUVER & GRILLE SCHEDULE

SYMBOL	TYPE	SERVICE	MAX CFM	NOMINAL SIZE	THROAT SIZE	CEILING TYPE	SCHEDULE NOTES
R-1	CEILING	RETURN	400	12X12	12X12	HARD	1,2,3,4
L-1	EXTERIOR LOUVER	FA INTAKE	8000	60X48	NA	NA	3,5,6
L-2	EXTERIOR LOUVER	FA INTAKE	17,600	132X48	NA	NA	3,5,6

REGISTER, LOUVER AND DIFFUSER SCHEDULE NOTES:

1. MAXIMUM NC = 25 @ MAXIMUM CFM NOTED.

2. SHALL BE PRICE 535 OR EQUAL BY OTHER APPROVED MANUFACTURERS.

3. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.

4. FINISH SHALL BE STANDARD WHITE.

5. LOUVER SHALL BE RUSKON MODEL L811 WITH NO WATER PENETRATION AT 700 FPM. FINISH SHALL BE BAKED ENAMEL WITH COLOR SELECTED BY OWNER.

6. FIELD VERIFY EXACT LOUVER DIMENSION AT EXISTING ROOF MOUNTED PENTHOUSE PRIOR TO ORDERING.

INDIRECT GAS FIRED MAKE-UP AIR UNIT SCHEDULE

SYMBOL	OUTPUT MBH	C.F.M.	E.S.P. IN W.C.	ENT. AIR TEMP	AIR TEMP RISE	MOTOR			MANUF. & MODEL #	SCHEDULE NOTES
						V - Ø - Hz	HP	WEIGHT		
MA 1	1,080,000	12,000	1.0	0	90	460-3-60	7.5	2000 LBS	ARES 1200	1,2,3
1. INDIRECT GAS FIRED HEAT EXCHANGER										
2. CONDITIONS AT ALTITUDE 4500 FT										
3. PROVIDE WITH CURB, MODULATING GAS VALVE, DOWNTURN SUPPLY SECTION, FACTORY CONTROLS, AND ALL OTHER COMPONENTS AS NECESSARY FOR FULL OPERATION.										

State of Utah  
Department of Administrative Services

Division of Facilities  
Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114  
Phone: (801) 538 - 3018  
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS

WHW  
ENGINEERING INC.

PROFESSIONAL MECHANICAL ENGINEERING  
1354 East 3300 South Suite 200  
SALT LAKE CITY, UTAH 84106  
(801)466-4021 FAX 466-8836  
EMAIL: excellence@whw-engineering.com

PROJECT NAME & ADDRESS

DAVIS ATC  
HVAC UPGRADE  
BUILDING C

DFCM No. 07174220

550 E. 300 S. Kaysville, Utah 84037

MARK	DATE	REVISION

PROJECT MANAGER:  
WP

DRAWN BY:  
STAFF

CHECKED BY:  
SLW

DATE:  
10/10/07

WHW JOB NO.:  
07050

SHEET TITLE

MECHANICAL DETAILS  
AND SCHEDULES

SHEET NO.

ME601